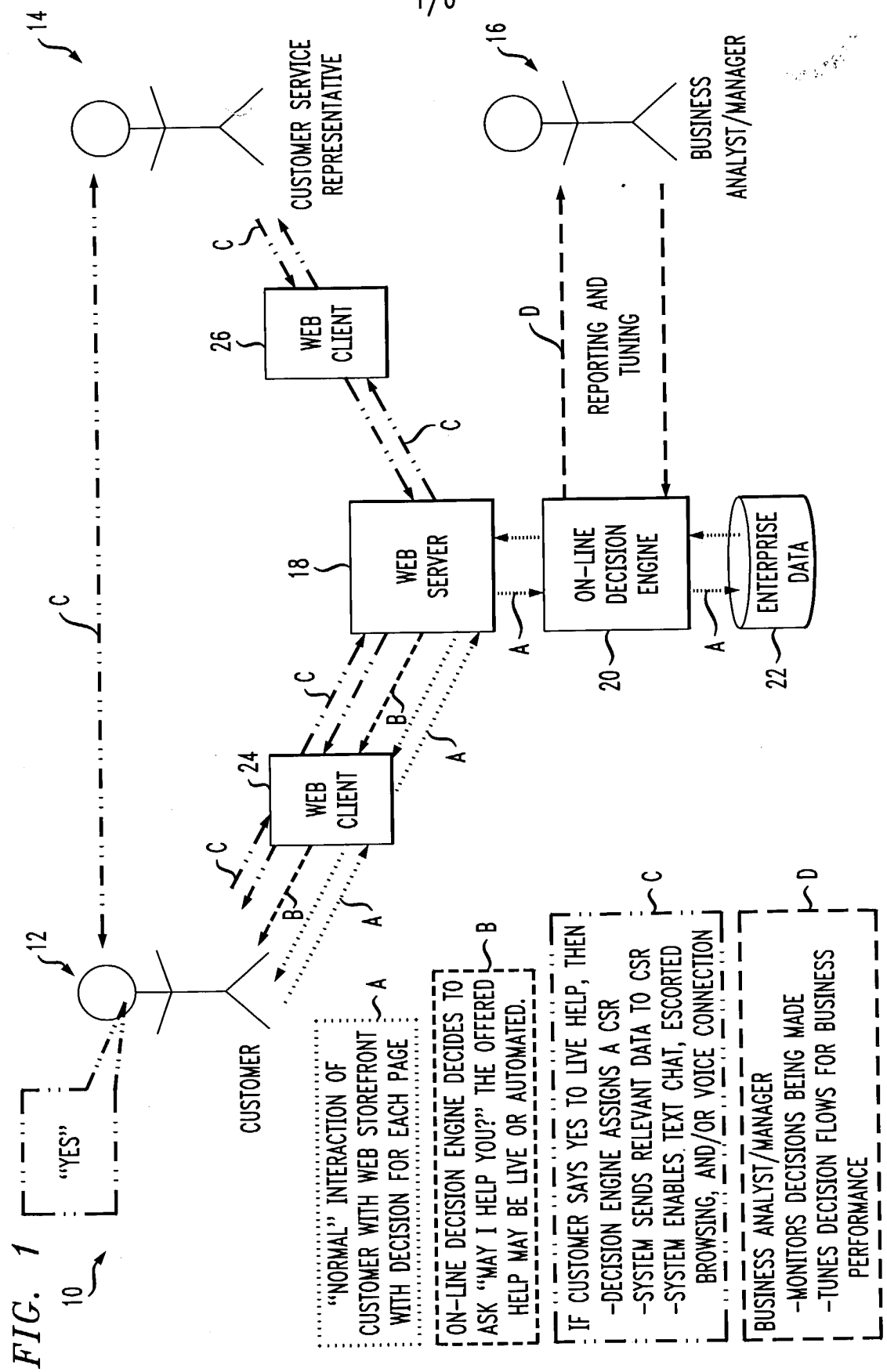
14
CUSTOMER SERVICE REPRESENTATIVE
16
BUSINESS ANALYST/MANAGER
C
26
WEB CLIENT
D
REPORTING AND TUNING
C
18
WEB SERVER
ON-LINE DECISION ENGINE
ENTERPRISE DATA
A
20
22
C
B
A
24
WEB CLIENT
C
B
A
12
CUSTOMER
10
"YES"
"NORMAL" INTERACTION OF CUSTOMER WITH WEB STOREFRONT WITH DECISION FOR EACH PAGE
A
ON-LINE DECISION ENGINE DECIDES TO ASK "MAY I HELP YOU?" THE OFFERED HELP MAY BE LIVE OR AUTOMATED.
B
IF CUSTOMER SAYS YES TO LIVE HELP, THEN
-DECISION ENGINE ASSIGNS A CSR
-SYSTEM SENDS RELEVANT DATA TO CSR
-SYSTEM ENABLES TEXT CHAT, ESCORTED BROWSING, AND/OR VOICE CONNECTION
C
BUSINESS ANALYST/MANAGER
-MONITORS DECISIONS BEING MADE
-TUNES DECISION FLOWS FOR BUSINESS PERFORMANCE
D

FIG. 1

FIG. 2

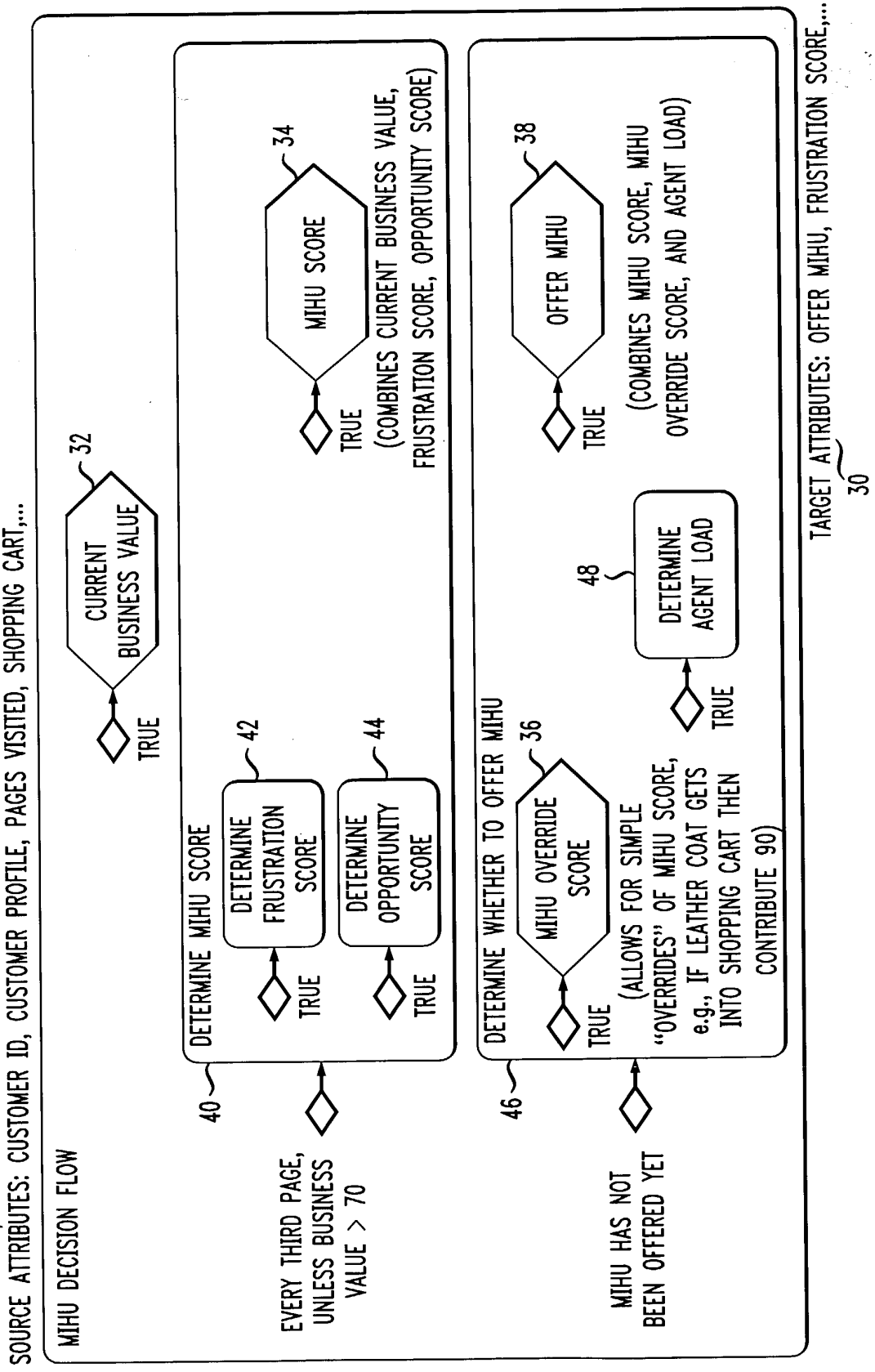
28
SOURCE ATTRIBUTES: CUSTOMER ID, CUSTOMER PROFILE, PAGES VISITED, SHOPPING CART,...
MIHU DECISION FLOW
EVERY THIRD PAGE, UNLESS BUSINESS VALUE > 70
MIHU HAS NOT BEEN OFFERED YET
40
DETERMINE MIHU SCORE
32
CURRENT BUSINESS VALUE
TRUE
42
DETERMINE FRUSTRATION SCORE
TRUE
44
DETERMINE OPPORTUNITY SCORE
TRUE
34
MIHU SCORE
TRUE
(COMBINES CURRENT BUSINESS VALUE, FRUSTRATION SCORE, OPPORTUNITY SCORE)
46
DETERMINE WHETHER TO OFFER MIHU
36
MIHU OVERRIDE SCORE
TRUE
(ALLOWS FOR SIMPLE "OVERRIDES" OF MIHU SCORE, e.g., IF LEATHER COAT GETS INTO SHOPPING CART THEN CONTRIBUTE 90)
48
DETERMINE AGENT LOAD
TRUE
38
OFFER MIHU
TRUE
(COMBINES MIHU SCORE, MIHU OVERRIDE SCORE, AND AGENT LOAD)
TARGET ATTRIBUTES: OFFER MIHU, FRUSTRATION SCORE,...
30

FIG. 3

50 SESSION ID	51 PAGE	52 BUSINESS VALUE	53 FRUSTRATION SCORE	54 OPPORTUNITY SCORE	55 MIHU SCORE	56 OVERRIDE SCORE	57 CSR LOAD	58 OFFER MIHU
59 250	1	70	6	0	46	0	80	FALSE
60 250	2	70	14	0	54	0	81	FALSE
61 250	3	70	20	0	60	0	81	FALSE
62 250	4	70	24	0	64	0	79	FALSE
63 250	5	85	8	51	83	0	78	TRUE
64 282	1	40	6	0	25	0	83	FALSE
65 282	2	40	-	-	-	0	82	FALSE
66 282	3	57	-	-	-	90	82	TRUE
67 282	4	57	16	29	43	-	-	-
68 282	5	57	-	-	-	-	-	-
69 282	6	71	19	37	58	-	-	-
70 282	7	71	25	48	58	-	-	-

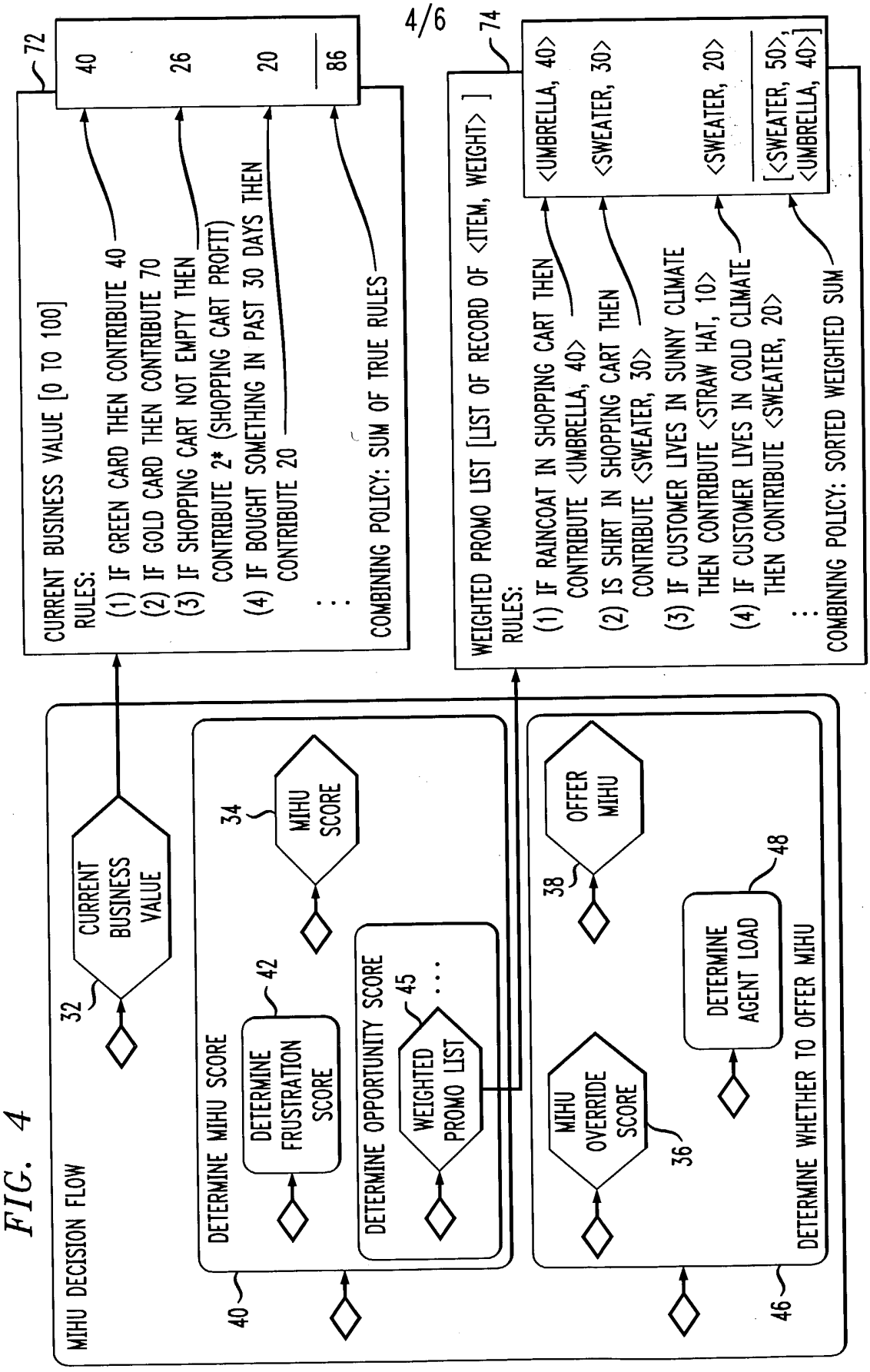
MIHU DECISION FLOW
CURRENT BUSINESS VALUE
32
DETERMINE MIHU SCORE
34
MIHU SCORE
DETERMINE FRUSTRATION SCORE
42
DETERMINE OPPORTUNITY SCORE
45
WEIGHTED PROMO LIST
40
OFFER MIHU
38
MIHU OVERRIDE SCORE
36
DETERMINE AGENT LOAD
48
DETERMINE WHETHER TO OFFER MIHU
46
CURRENT BUSINESS VALUE [0 TO 100]
RULES:
(1) IF GREEN CARD THEN CONTRIBUTE 40
(2) IF GOLD CARD THEN CONTRIBUTE 70
(3) IF SHOPPING CART NOT EMPTY THEN CONTRIBUTE 2* (SHOPPING CART PROFIT)
(4) IF BOUGHT SOMETHING IN PAST 30 DAYS THEN CONTRIBUTE 20
COMBINING POLICY: SUM OF TRUE RULES
72
40
26
20
86
WEIGHTED PROMO LIST [LIST OF RECORD OF <ITEM, WEIGHT>]
RULES:
(1) IF RAINCOAT IN SHOPPING CART THEN CONTRIBUTE <UMBRELLA, 40>
(2) IS SHIRT IN SHOPPING CART THEN CONTRIBUTE <SWEATER, 30>
(3) IF CUSTOMER LIVES IN SUNNY CLIMATE THEN CONTRIBUTE <STRAW HAT, 10>
(4) IF CUSTOMER LIVES IN COLD CLIMATE THEN CONTRIBUTE <SWEATER, 20>
COMBINING POLICY: SORTED WEIGHTED SUM
74
<UMBRELLA, 40>
<SWEATER, 30>
<SWEATER, 20>
[<SWEATER, 50>, <UMBRELLA, 40>]

FIG. 4

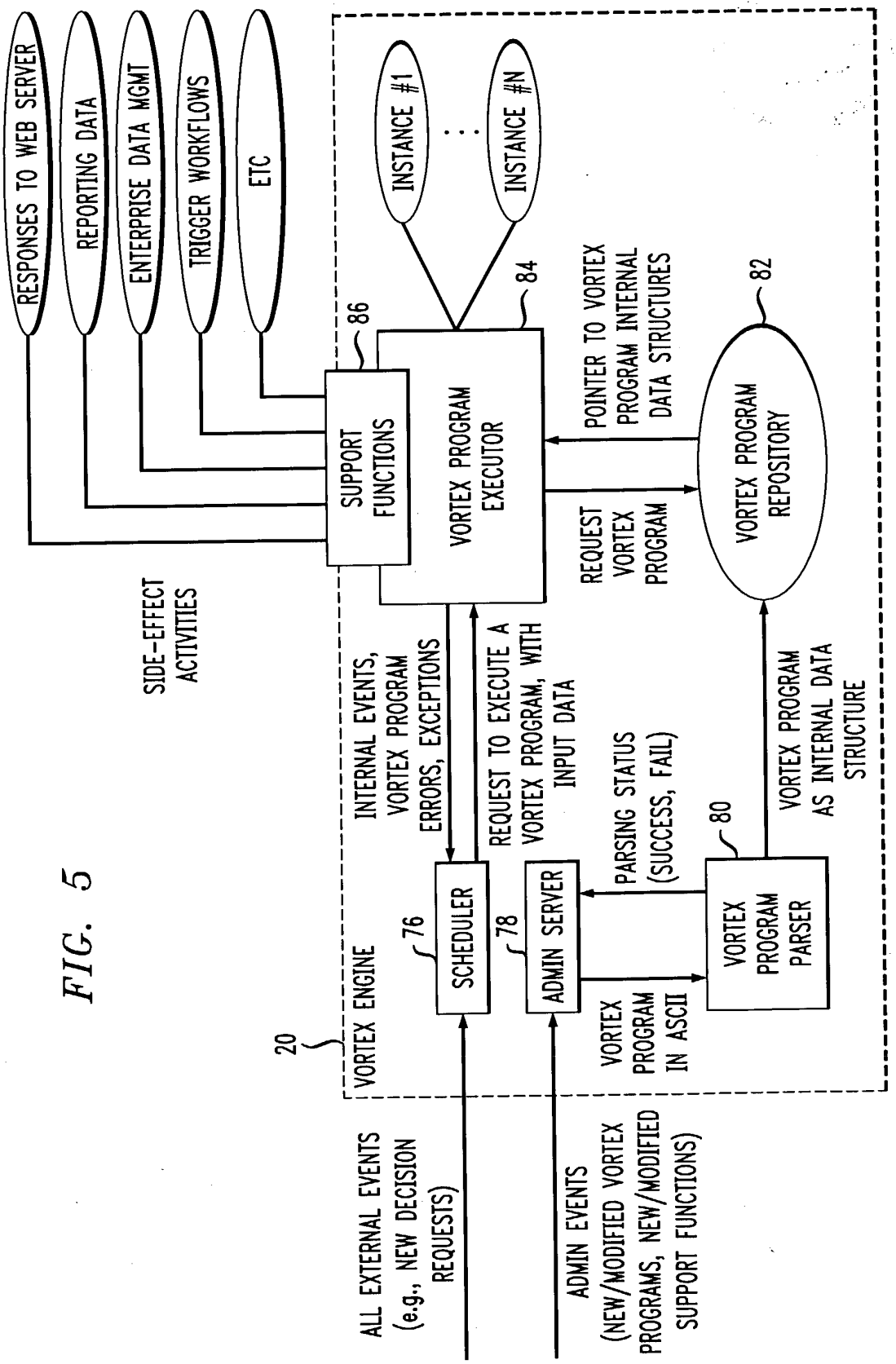
RESPONSES TO WEB SERVER
REPORTING DATA
ENTERPRISE DATA MGMT
TRIGGER WORKFLOWS
ETC
INSTANCE #1
INSTANCE #N
84
86
82
SUPPORT FUNCTIONS
VORTEX PROGRAM EXECUTOR
POINTER TO VORTEX PROGRAM INTERNAL DATA STRUCTURES
REQUEST VORTEX PROGRAM
VORTEX PROGRAM REPOSITORY
SIDE-EFFECT ACTIVITIES
INTERNAL EVENTS, VORTEX PROGRAM ERRORS, EXCEPTIONS
REQUEST TO EXECUTE A VORTEX PROGRAM, WITH INPUT DATA
PARSING STATUS (SUCCESS, FAIL)
80
VORTEX PROGRAM AS INTERNAL DATA STRUCTURE
20
VORTEX ENGINE
76
SCHEDULER
78
ADMIN SERVER
VORTEX PROGRAM PARSER
VORTEX PROGRAM IN ASCII
ALL EXTERNAL EVENTS (e.g., NEW DECISION REQUESTS)
ADMIN EVENTS (NEW/MODIFIED VORTEX PROGRAMS, NEW/MODIFIED SUPPORT FUNCTIONS)

FIG. 5

FIG. 6

STRATEGY	CONVERTING LEGACY SITES EASY	HTTPS HANDLED	HTTP RESPONSE TRANSFORMATION REQUIRED	HTTP RESPONSE PARSING REQUIRED
CONTENT GENERATION SCRIPTS SEND HIGH-LEVEL SEMANTICS TO ENGINE	NO	YES	NO	NO
CONTENT GENERATION SCRIPTS SEND RAW HTML TO ENGINE	YES	YES	NO	YES
WRAPPER SCRIPTS	YES	YES	MAYBE	YES
PROXIES	YES	NO	NO	YES
WEB SERVER EXTENSIONS	YES	YES	NO	NO
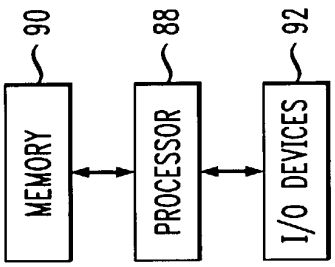
FIG. 7